# Interaction 1

**Teacher**: Ok, so can you explain this to me?

**Kareem:** Well, we thought that 4 frogs and 5 fairy godmothers were of the same strength, so we divided 4 by 5, for a rate of what it takes for one frog to beat a fairy godmother.

**Teacher**: What made you think of unit rates?

**Kareem:** Uh, because we wanted [inaudible comment] a number.

**Teacher**: What did you find out when you did that?

**Kareem:** [inaudible]

**Teacher**: How many frogs were there?

**Kareem:** Four.

**Teacher:** And how many fairy godmothers were there?

**Kareem:** Five.

**Teacher:** So, if you . . . you said you divided 4 frogs by 5 fairy godmothers.

**Kareem:** Ya. [. . .] So, we got 0.8, because that’s how much. . .

**Brian**: That’s how many fairies there are . . .

**Kareem**: So, basically, one frog could beat a fairy because the frog is stronger. One whole frog is equal to. . . Or no. One fairy godmother is equal to. . .

**Teacher**: Ok, why does that make sense?

**Kareem:** Well, they tied when it was 4 frogs, but it was 5 fairy godmothers. It was equal. So, we wanted to find out what it was for one frog. So, we divided 4 by 5 to figure out what was the 4 out of 5 [inaudible] to find out what could beat one fairy godmother.

# Interaction 2

**Eric**: . . . Then we added the value of the [. . .], and we found out that the dragon and the fairy godmothers would win, because we divided 4 by 5, so that the frog’s value was 1 ¼ [. . .] and the fairy godmother’s value is here, so then the dragon’s would be 3 ¼.

**Teacher**: How did you get that the dragons would be 3 ¼?

**Eric**: We put 1 dragon to that side and then we added 2 fairy godmothers and 1 frog and we got 3 ¼.

**Teacher**: So, when you to the dragons on one side, you put what values in for the godmothers?

**Eric**: The godmother’s value is 1.

**Teacher**: Is 1. From here, from your calculations.

**Eric**: Ya.

**Teacher**: So, you said that 1 dragon equals 2 godmothers, which is 2, plus. . . .

**Eric**: 1 frog.

**Teacher**: That’s where you got the 3.25.

**Eric**: Ya.

**Teacher**: And so then when you got that the dragon equalled 3.25, how did you figure out that he would win?

**Eric**: We added the 3 fairy godmothers to it to get 6.25, and then we added all of the frogs up to get 4.

**Teacher**: Ok, can you elaborate a little bit more on this. Because I think that if I came along and just read this, I wouldn’t be able to follow your thinking. So, pretend that you are somebody in Grade 6 or 7 and you are coming in, and you don’t get to talk to anyone, what information would they need to follow your steps. Ok? Can you add that in here for me?

# Interaction 3

**Teacher**: I like that you changed colours. Why did you change colours, and why did you change shape?

**Kate:** Well, it is just easier, because with different colours, so you don’t get mixed up. You can easily tell by there. You can have a different shape for every....

**Emily:** The second one was two of the fairy godmothers...

**Kate:** And a dragon.

**Emily:** And do you want me to do the third one as well?

**Teacher:** Sure.

**Kate:** Dragon so, orange. I guess a dragon is closest to orange. So, an orange-coloured triangle. And a blue circle [....]

**Teacher:** Do you want to explain to Emily what you are doing? (?)

**Kate:** I am representing (?) them with different colours and shape, because I am using the [green] frogs as blue circles and the white [referring to the cube-links used] fairy godmothers as the orange squares, so I don’t get mixed up on which is which. So, if I just put four, if I just put three squares, that I would probably get mixed up with who’s with who. So, I knew that these were handsome frogs, and I had one handsome frog against the 2 fairy godmothers, so I put one blue and the 2 orange.

**Teacher:** So, what do we think we should do next?

**Emily:** Maybe draw out...the third round and then...

**Teacher:** Ok, so why don’t we try that. The only thing I am wondering is how are you going to remember who these are?

**Emily:** Oh, write a legend. [Writing the legend. Draws a blue circle, then an equal sign.] That’s our frog, right?

**Kate:** Yep.